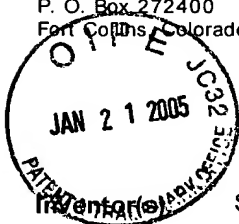


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AF
PATENT APPLICATION

ATTORNEY DOCKET NO. 200308253-1



IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s) Stephen Carney

Confirmation No.: 8794

Application No.: 09/712,101

Examiner: Quang N. Nguyen

Filing Date: 11-14-2000

Group Art Unit: 2141

Title: Dynamic Load Balancing of Video Requests

Mail Stop Appeal Brief-Patents
Commissioner For Patents
PO Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL OF APPEAL BRIEF

Sir:

Transmitted herewith is the Appeal Brief in this application with respect to the Notice of Appeal filed on 11-24-2004.

The fee for filing this Appeal Brief is (37 CFR 1.17(c)) \$500.00.

(complete (a) or (b) as applicable)

The proceedings herein are for a patent application and the provisions of 37 CFR 1.136(a) apply.

() (a) Applicant petitions for an extension of time under 37 CFR 1.136 (fees: 37 CFR 1.17(a)-(d) for the total number of months checked below:

() one month	\$120.00
() two months	\$450.00
() three months	\$1020.00
() four months	\$1590.00

() The extension fee has already been filled in this application.

(X) (b) Applicant believes that no extension of time is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

Please charge to Deposit Account **08-2025** the sum of \$500.00. At any time during the pendency of this application, please charge any fees required or credit any over payment to Deposit Account 08-2025 pursuant to 37 CFR 1.25. Additionally please charge any fees to Deposit Account 08-2025 under 37 CFR 1.16 through 1.21 inclusive, and any other sections in Title 37 of the Code of Federal Regulations that may regulate fees. A duplicate copy of this sheet is enclosed.

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Respectfully submitted,

Stephen Carney

By Dan C. Hu

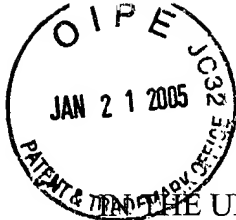
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THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Stephen Carney § Group Art Unit: 2141
Serial No.: 09/712,101 §
Filed: November 14, 2000 § Examiner: Quang N. Nguyen
For: Dynamic Load Balancing of Video §
Requests § Atty. Dkt. No.: 200308253-1
(HPC.0052US)

Mail Stop Appeal Brief-Patents

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF PURSUANT TO 37 C.F.R § 41.37

Sir:

The final rejection of claims 2, 4-12, and 21-33 is hereby appealed.

I. REAL PARTY IN INTEREST

The real party in interest is Hewlett-Packard Development Company, L.P., by virtue of the assignment recorded at reel/frame 014177/0428.

II. RELATED APPEALS AND INTERFERENCES

None.

Date of Deposit: January 18, 2005

I hereby certify under 37 CFR 1.8(a) that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage on the date indicated above and is addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313.

Ginger Yount
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01/24/2005 SSITHIB1 00000067 082025 09712101

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III. STATUS OF THE CLAIMS

Claims 2, 4-12, and 21-33 have been finally rejected and are the subject of this appeal.

Claims 1, 3, and 13-20 have been cancelled.

IV. STATUS OF AMENDMENTS

The claims have not been amended after final rejection.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

Independent claim 4 recites a distributed streaming media server system that includes a plurality of streaming media servers that each store a selection of multimedia files, and a master streaming media server communicatively coupled to the plurality of streaming media servers and that compiles mapping information regarding a location of each of the multimedia files that are stored on each of the plurality of streaming media servers. The distributed streaming media server system further includes at least one streaming media client that requests access to a multimedia file through the master streaming media server and receives setup information regarding the requested multimedia file such that the at least one streaming media client may directly access the multimedia file from one of the plurality of streaming media servers. The at least one streaming media client receives the setup information from one of the plurality of streaming media servers.

Independent claim 21 recites a method of enabling retrieval of a media file, that includes receiving, at a master server, a user request for the media file from a streaming media client, and selecting, at the master server, based on the user request, one of a plurality of streaming media servers for handling the user request for the media file. Also, the method includes sending, from the master server to the selected one of the plurality of streaming media servers, a request to

enable the selected streaming media server to send information to the streaming media client for establishing a streaming session between the streaming media client and the selected streaming media server.

Independent claim 28 recites a system capable of communicating with a streaming media client and a plurality of streaming media servers, comprising an interface to receive a user request for a media file from the streaming media client over a network, and a module to select, based on the user request, one of the plurality of streaming media servers separate from the system for handling the user request for the media file. Also, the module is able to send, to the selected one of the plurality of streaming servers, a request to enable the selected streaming media server to send information to the streaming media client for establishing a streaming session between the streaming media client and the selected streaming media server.

An example network of some embodiments of the invention is depicted in Fig. 1 of the specification, which shows various networks coupled to client computer hardware (CCH) and server computer hardware (SCH). Specification, p. 9, lines 2-9. A request for a media file can be made from a CCH and sent to a master server computer hardware (MSCH). The MSCH contains a table of the locations of all the media files and all the SCHs. Specification, p. 9, lines 14-22.

Fig. 2 identifies the various network entities of Fig. 1 as being a master streaming media server (MSMS), streaming media servers (SMSs), and streaming media clients (SMCs). A user may enter a request for a media file through an SMC, with the SMC accessing the MSMS, which locates an acceptable SMS that contains the requested media file. Specification, p. 11, lines 10-18.

Fig. 5 shows interactions according to one embodiment between the entities of Fig. 2. The SMC sends a request for a video file to the MSMS, which determines which SMS has the requested video file. If plural SMSs have the requested video file, the MSMS considers factors such as load balancing to select a specific SMS to satisfy the SMC request. The MSMS forwards the SMC request to the selected SMS, which sends its setup information to the MSMS. Specification, p. 13, line 14-p. 14, line 2. The MSMS forwards the setup information (from the selected SMS) to the SMC. The SMC receives the setup information from the selected SMS, and the selected SMS sends or streams the requested video file to the SMC. Specification, p. 14, lines 3-7.

Although several embodiments of the invention have been described above, it is contemplated that other embodiments are within the scope of the claims on appeal.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

- A. Claims 2, 4-12, And 21-33 Are Rejected Under 35 U.S.C. § 103 Over U.S. Patent No. 6,412,004 (Chen) In View of U.S. Patent No. 6,360,262 (Guenthner).**

VII. ARGUMENT

- A. Claims 2, 4-12, And 21-33 Are Rejected Under 35 U.S.C. § 103 Over U.S. Patent No. 6,412,004 (Chen) In View of U.S. Patent No. 6,360,262 (Guenthner).**

1. Claims 2, 4-7, and 9-12.

Independent claim 4 was rejected as being obvious over the asserted combination of Chen and Guenthner.

To establish a *prima facie* case of obviousness, the Examiner must establish that there was some suggestion or motivation, either in the references themselves or in the knowledge

generally available to one of ordinary skill in the art, to combine reference teachings. M.P.E.P. § 2143 (8th ed., Rev. 2), at 2100-129.

As conceded by the Examiner, Chen does not disclose that the streaming media client receives setup information from one of the plurality of streaming media servers. 7/14/2004 Office Action at 3. However, the Examiner relied upon Guenthner (specifically Figure 4B of Guenthner) as teaching the missing element. *Id.* at 4.

Appellant respectfully submits that the Examiner has failed to establish a *prima facie* case of obviousness because there was no motivation or suggestion to combine the teachings of Chen and Guenthner to achieve the claimed invention. Chen describes an arrangement in which a metasever receives a request from a client, and in response to the request, the metasever supplies the *client* computer with a list of possible multimedia servers. Chen, 10:19-25. In response, the client computer connects to the first available server from the list of eligible multimedia server names. Chen, 10:27-29. In other words, in Chen, it is the client that has to select a server from a list provided by the metasever to the client. This necessarily means that the client has to first perform selection of a multimedia server, before the client can establish any type of communication between the client and the multimedia server.

The *opposite* is performed in Figure 4B of Guenthner, which refers to a web client sending a request for a resource object to a resource router, which then forwards the request to a server. The server then sends its response back to the client. Guenthner, 4:64-5:6. The procedure in Figure 4B of Guenthner would violate the teachings of Chen, which requires that the metasever first sends a list of possible multimedia servers to the client so that the client can pick the multimedia server to connect to for retrieving multimedia content (Chen, 6:41-49). It is well established that a proposed modification of a prior art reference cannot render the prior art

reference unsatisfactory for its intended purpose. *See* MPEP § 2143.02, at 2100-131. “If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification.” *Id.* (citing *In Re Gordon*, 733 F.2d 900, 221 U.S.P.Q. 1125 (Fed. Cir. 1984)).

It is also established that if a proposed modification or combination of prior art would change the principle of operation of the prior art invention being modified, “then the teachings of the references are not sufficient to render the claims *prima facie* obvious.” *Id.* at 2100-132. Here, the proposed modification of Chen by the Guenther Figure 4B arrangement would change the principle of operation of the Chen system and would also render the Chen system unsatisfactory for its intended purpose of enabling the client to select a multimedia server from a list of multimedia servers provided by a metasever. Therefore, it is respectfully submitted that there existed no motivation or suggestion to combine Chen and Guentner.

The following rationale was provided by the Examiner regarding how Chen and Guentner can be combined:

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Chen and Guentner to let the at least one streaming media client receives [sic] the setup information from one of the plurality of streaming media servers since such methods were conventionally employed in the art to allow the system to select the “best provider” and redirect or forward the request to that server as **operating in “handoff” mode**, to eliminate the bottleneck problem associated with the limited speed of a single multimedia server, reduce network congestion and increase the fault tolerance of the whole system.

7/14/2004 Office Action at 4 (emphasis in original).

However, the argument made by the Examiner regarding why Chen and Guentner can be combined ignores the fact that modifying the system of Chen with the teachings of Guentner would change the principle of operation of the Chen system and would render the system of Chen unsatisfactory for its intended purpose. The procedure in Figure 4B of Guentner would

violate the teachings of Chen, which requires that the metasever first send a list of possible multimedia servers to the client so that the client can select the multimedia server to connect to for retrieving multimedia content (Chen, 6:41-49).

Modifying the Chen system with the Guentner Figure 4B arrangement would cause the metasever of Chen to send the list of multimedia servers to one of the multimedia servers instead of the client, which would effectively prevent the client of Chen from selecting a multimedia server from the list. This is a clear indication that there existed no suggestion or motivation to make the proposed modification or combination.

To further support the Examiner's arguments regarding obviousness of the claims, the Examiner cited *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). 10/26/2004 Advisory Action at 9. This case cited by the Examiner actually supports Appellant's arguments that the claims are non-obvious over the asserted combination of Chen and Guentner, and does *not* support the Examiner's arguments that the claims are obvious over these references. The issue of the present case is similar to the issue presented to the Federal Circuit in *In re Fine*. In *In re Fine*, the Board's affirmance of the Examiner's obviousness rejection was reversed by the Federal Circuit, which stated that the teachings of one of the references (Warnick) are inconsistent with the claimed invention, and therefore the Examiner has failed to establish a *prima facie* case of obviousness. *In re Fine*, 837 F.2d at 1074-75. In the present case, the teachings of Chen are clearly inconsistent with the subject matter recited in claim 4.

The present case is also similar to the scenario presented in *In re Gordon*, in which the Federal Circuit reversed an obviousness rejection where the modification of a prior art reference proposed by the Examiner would render the prior art apparatus inoperable for its intended purpose. *In re Gordon*, 733 F.2d at 902.

Moreover, there simply did not exist any desirability to incorporate the teachings of Guenthner into the system of Chen. It is well established law that “[t]he mere fact that the prior art could be so modified would not have made the modification **obvious** unless the prior art suggested the **desirability** of the modification.” *In re Gordon*, 733 F.2d at 902 (emphasis added). As the Federal Circuit has stated, “virtually all [inventions] are combinations of old elements.” *In re Rouffet*, 149 F.3d 1350, 1357, 47 U.S.P.Q.2d 1453 (Fed. Cir. 1998). “Most, if not all, inventions are combinations and mostly of old elements.” *Id.* “Therefore an examiner may often find every element of a claimed invention in the prior art. If identification of each claimed element in the prior art were sufficient to negate patentability, very few patents would ever issue. Furthermore, rejecting patents solely by finding prior art corollaries for the claimed elements would permit an examiner to use the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention. Such an approach would be ‘an illogical and inappropriate process by which to determine patentability.’” *Id.*

In Chen, three distinct types of nodes are provided on a network: client computers, multimedia servers, and metasevers. Each metasever is configured to store a metasever database. Chen, 6:6-10. The information in the metasever database is used to apply a selection algorithm, by the metasever, to determine a list of multimedia servers that a client can use. Chen, 6:41-45. The intelligence for selecting a list of media servers thus resides in the metasever. This intelligence enables the metasever to produce a list, with such list provided to a client to allow the client to make another selection.

The proposed modification of Chen based on the teachings of Guenthner, as proposed by the Examiner, would change the operation such that instead of sending the list from the

metaserver to the client, the list would be sent by the metaserver to the multimedia server of Chen. There is absolutely no reason for the metaserver to send its list of potential multimedia servers to any one of the multimedia servers, as such a list would be completely useless to any multimedia server. The operation of Chen depends on the fact that this list of potential multimedia servers is communicated to a client to allow the client to make the selection. In other words, according to Chen, there simply is no reason to involve a multimedia server in the selection of a multimedia server. A person of ordinary skill in the art looking to the teachings of Chen and Guenther would not have been motivated to change the operation of Chen to incorporate un-related teachings of Guenther. In fact, modifying the technique employed in Chen to cause a listing of multimedia servers to be sent to any of the multimedia servers would make the multimedia server selection process more inefficient. Therefore, it is respectfully submitted that, because no desirability existed to incorporate the teachings of Guenther into Chen, no motivation or suggestion existed to combine these references. A *prima facie* case of obviousness has thus not been established with respect to claim 4 (and its dependent claims).

In view of the foregoing, the final rejection of the above claims should be reversed.

2. Claims 21-33.

Independent claim 21 was also rejected as being obvious over the asserted combination of Chen and Guenther. Appellant respectfully submits that the Examiner has also failed to establish a *prima facie* case of obviousness with respect to this claim.

The Examiner indicated that claim 21 was rejected “under the same rationale” as claims 2 and 4-12. 7/14/2004 Office Action at 6. Claim 21 recites a method that includes a master server receiving a user request for a media file from a streaming media client; the master server selecting, based the user request, one of a plurality of streaming media servers for handling the

user requests for the media files; and the master server sending to the selected one of the plurality of streaming media servers a request to enable the selected streaming media server to send information to the streaming media client for establishing a streaming session between the streaming media client and the selected streaming media server.

As discussed above with respect to claim 4, the teachings of Chen and Guentner are inconsistent with each other, such that modifying the system of Chen to incorporate the teachings of Guentner would change the principle of operation of Chen and would render the Chen system inoperative for its intended purpose. More specifically, Chen describes an environment in which a metaserver sends a list of media servers to a *client* computer to enable the *client computer* to select from that list. The ability of a client to select from a list of candidate media servers would not be achievable using the Fig. 4B arrangement of Guentner, where a resource router forwards a request from a client to an appropriate server, with the server then sending its response directly back to the client. If Chen were modified such that its metaserver sends a list of candidate media servers to one of the media servers, then the goal of enabling a client to select from a media server on such a list would be defeated. This is a clear indication that no motivation or suggestion existed to combine the teachings of Chen and Guentner.

Moreover, as discussed above, there simply did not exist any reason or desirability to incorporate the teachings of Guentner into the system of Chen. In fact, incorporating the teachings of Guentner into Chen would make the system more inefficient.

In view of the foregoing, it is respectfully submitted that a *prima facie* case of obviousness has not been established with respect to claim 21 (and its dependent claims).

A *prima facie* case of obviousness has also not been established with respect to independent claim 28 (and its dependent claims) for similar reasons over the asserted combination of Chen and Guenthner.

In view of the foregoing, it is respectfully requested that the final rejection of the above claims be reversed.

3. Claim 8.

Claim 8 depends from claim 4, and is thus allowable for at least the same reasons as for claim 4.

Moreover, claim 8 recites that the master streaming media server includes a load poll thread, a load average queue, and load average threads to determine the load balancing among the plurality of streaming media servers. It is respectfully submitted that this additional feature of claim 8 is not disclosed or suggested by Chen and Guenthner.

The Examiner cited Chen, column 7, lines 1-38, as teaching this feature of claim 8. The cited passage of Chen relates to balancing the load across available multimedia servers by measuring how busy a server is. The cited passage of Chen also teaches that the metaserver periodically communicates with each multimedia server to receive from each multimedia server its status information such as number of current connections and multimedia content. However, there is no suggestion in Chen that the metaserver includes a load poll thread, a load average queue, and load average threads to determine load balancing among a plurality of streaming media servers.

This is an additional reason that a *prima facie* case of obviousness has not been established with respect to claim 8. Reversal of the final rejection of claim 8 is respectfully requested.

VIII. CONCLUSION

In view of the foregoing, reversal of all final rejections and allowance of all pending claims is respectfully requested.

Respectfully submitted,

Date: _____

Jan 18, 2005



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APPENDIX OF CLAIMS

The claims on appeal are:

1 2. The distributed streaming media server system of claim 4 wherein the multimedia
2 files of the distributed streaming media server system comprise video files.

3 4. A distributed streaming media server system, comprising:
4 a plurality of streaming media servers that each store a selection of multimedia
5 files;
6 a master streaming media server communicatively coupled to the plurality of
7 streaming media servers and that compiles mapping information regarding a location of each of
8 the multimedia files that are stored on each of the plurality of streaming media servers; and
9 at least one streaming media client that requests access to a multimedia file
10 through the master streaming media server and receives setup information regarding the
11 requested multimedia file such that the at least one streaming media client may directly access
12 the multimedia file from one of the plurality of streaming media servers,
13 wherein the at least one streaming media client receives the setup information
14 from one of the plurality of streaming media servers.

1 5. The distributed streaming media server system of claim 4 wherein the request for
2 access to the multimedia file by the at least one streaming media client is multiplexed.

1 6. The distributed streaming media server system of claim 4 wherein the master
2 streaming media server considers load balancing when determining which of the plurality of
3 streaming media servers is selected for access by the at least one streaming media client.

1 7. The distributed streaming media server system of claim 4 wherein the master
2 streaming media server includes a socket thread, a request queue, and request threads to initiate
3 transmission of information between the at least one streaming media client and the plurality of
4 streaming media servers.

1 8. The distributed streaming media server system of claim 4 wherein the master
2 streaming media server includes a load poll thread, a load average queue, and load average
3 threads to determine the load balancing among the plurality of streaming media servers.

1 9. The distributed streaming media server system of claim 4 wherein the master
2 streaming media server selects one of the plurality of streaming media servers different from the
3 master streaming media server to access for the requested multimedia file and redirects the
4 requesting client to exchange information directly with the one of the plurality of streaming
5 media servers.

1 10. The distributed streaming media server system of claim 4 wherein the master
2 streaming media server utilizes a logical content database that is queried by the master streaming
3 media server to identify which of the plurality of streaming media servers possesses a specific
4 streaming media file that fulfills a request for the specific streaming media file originating from
5 the at least one streaming media client.

1 11. The distributed streaming media server system as set forth in claim 4 wherein the
2 at least one streaming media client, the master streaming media server, and one of the plurality of
3 streaming media servers utilize a connectionless and stateless communications protocol between
4 the at least one streaming media client and the master streaming media server, between the
5 master streaming media server and the one of the plurality of streaming media servers, and
6 between the one of the plurality of the streaming media servers and the at least one streaming
7 media client.

1 12. The distributed streaming media server system as set forth in claim 11 wherein
2 the connectionless and stateless communications protocol is integrated directly into the master
3 streaming media server, the one of the plurality of streaming media servers, and the at least one
4 streaming media client.

1 21. A method of enabling retrieval of a media file, comprising:
2 receiving, at a master server, a user request for the media file from a streaming
3 media client;
4 selecting, at the master server, based on the user request, one of a plurality of
5 streaming media servers for handling the user request for the media file; and
6 sending, from the master server to the selected one of the plurality of streaming
7 media servers, a request to enable the selected streaming media server to send information to the
8 streaming media client for establishing a streaming session between the streaming media client
9 and the selected streaming media server.

1 22. The method of claim 21, wherein selecting the one of the plurality of streaming
2 media servers is performed to achieve load balancing.

1 23. The method of claim 22, further comprising accessing by the master server,
2 mapping information to determine which of the plurality of streaming media servers contains the
3 requested media file.

1 24. The method of claim 22, further comprising contacting each of the streaming
2 media servers to determine its operational status, wherein selecting one of the plurality of
3 streaming media servers is further based on the determined operational status.

1 25. The method of claim 22, further comprising examining bandwidth history of the
2 plurality of streaming media servers, wherein selecting one of the plurality of streaming media
3 servers is further based on the bandwidth history.

1 26. The method of claim 22, further comprising determining which of the plurality of
2 streaming media servers are equipped to fulfill the request for the media file, wherein selecting
3 one of the plurality of streaming media servers is further based on the determining.

1 27. The method of claim 21, wherein selecting one of the streaming media servers
2 comprises selecting one of the streaming media servers different from the master server.

1 28. A system capable of communicating with a streaming media client and a plurality
2 of streaming media servers, comprising:

3 an interface to receive a user request for a media file from the streaming media
4 client over a network; and

5 a module to:
6 select, based on the user request, one of the plurality of streaming media
7 servers separate from the system for handling the user request for the media file,
8 send, to the selected one of the plurality of streaming media servers, a
9 request to enable the selected streaming media server to send information to the streaming media
10 client for establishing a streaming session between the streaming media client and the selected
11 streaming media server.

1 29. The system of claim 28, the module to select the one of the plurality of streaming
2 media servers to achieve load balancing.

1 30. The system of claim 29, the module to further access mapping information to
2 determine which of the plurality of streaming media servers contains the requested media file.

1 31. The system of claim 30, wherein the media file comprises a video file.

1 32. The system of claim 28, the module to further exam bandwidth history of the
2 plurality of streaming media servers,
3 wherein the module selects one of the plurality of streaming media servers based
4 on the examination of the bandwidth history.

1 33. The distributed streaming media server system of claim 5, wherein the streaming
2 media server from which the at least one streaming media client receives the setup information is
3 separate from the master streaming media server.